

# Enterprise Resource Planning Courses

Offered by the Department of Business & Information Technology, <http://erp.mst.edu> [erp@mst.edu](mailto:erp@mst.edu) 573-341-6436

## Our ERP Program...



**Joseph Pieczynski**  
Accenture

... the ERP program at Missouri S&T has prepared me extremely well for my life at Accenture. ... The consultants and teachers... thought I was an experienced hire with extensive experience in ERP and consulting. ...thank you and the other...



**Pam Ryder**  
Union Pacific

... The professors teach the students knowledge of ERP, by applying what they have learned through their real-world experiences and applying their knowledge to the classroom...

### ERP 2110: Introduction to Enterprise Resource Planning (ERP)

**Prerequisite:** IST 1750

Fundamentals of enterprise resource planning (ERP) systems concepts, and the importance of integrated information systems in an organization. The focus of this course is on illustrating procurement, production, and sales business processes using ERP software. Use of SAP's ERP Business Suite as an example ERP system.

### ERP 4110: ERP Systems in Health Care Industry

**Prerequisite:** IST 1750

Specialization of ERP systems and concepts to the field of Health Care, with special emphasis on Business Process Integration in this environment.

### ERP 4220: Introduction to Enterprise Decision Dashboards

**Prerequisite:** IST 1750

Study design and implementation principles for enterprise decision dashboards utilizing data warehouse and databases to support visual analytics. SAP Predictive Analytics/Lumira, HANA Cloud Platform (HCP), HANA Studio, Fiori, IBM Watson Analytics, SAS Visual Analytics, or similar tools are used for practical assignments.

### ERP/IST 4444: Introduction to Data Warehouse

**Prerequisite:** IST 3423 or equivalent relational database experience

This course presents the topic of data warehouses and the value to the organization. It takes the student from the database platform to structuring a data warehouse environment. Focus is placed on simplicity and addressing the user community needs.

### ERP 4610: Customer Relationship Management in ERP Environment

**Prerequisite:** ERP 2110 or preceded or accompanied by ERP 5110

The course emphasizes identification (targeting), acquisition, retention, and development (expansion) of (profitable) customers, as well as effective and efficient management of customers, using information technology. SAP CRM and SAS Enterprise Miner are used.

### ERP 5110: Enterprise Resource Planning Systems (ERP) Design and Implementation

**Prerequisites:** IST 1750

This course provides a technical overview of Enterprise Resource Planning Systems and their impact on organizations. SAP's ERP system is introduced to illustrate the concepts, fundamentals, framework, general information technology context, the technological infrastructure, and integration of business enterprise-wide applications.

### ERP 5130: ERP Enterprise Resource Planning in Small and Mid-size Enterprises

**Prerequisite:** (BUS1210 AND ERP2110) or ERP5110

The course provides an overview of enterprise applications for small and midsize companies. The course provides an overview of the new generation of business application for small and midsize companies. Microsoft Dynamics AX 2012 will be introduced to illustrate the enterprise-wide application.

### ERP 5210: Performance Dashboards, Scorecard, Data Visualization

**Prerequisite:** ERP 2110 or preceded or accompanied by ERP 5110

This course studies different performance management systems including dashboards, management cockpit, scorecards, and strategy maps in an organization. SAP's BW, Predictive Analytics/Lumira, and Design Studio, Tableau, and IBM Watson Analytics are used to develop the dashboard applications.

### ERP 5240: Enterprise Application Development and Software Security

**Prerequisites:** Programming knowledge and either ERP 2110 or preceded or accompanied by ERP 5110

This course provides conceptual foundation and hands on experience in web based (HTML5) applications development deployed through an enterprise platform. SAP Enterprise development tools will be used to build these apps, using SAP HANA Cloud Platform. This course also covers cyber security from a software security perspective.

### ERP 5310: Supply Chain Management Systems

**Prerequisite:** ERP 2110 or preceded or accompanied by ERP 5110

The course studies the need for supply chain integration and the challenges of managing complex interfaces using the systems approach for the planning, analysis, design, development, and evaluation of supply chain. SAP's ERP ECC, S/4 HANA, SCM, and SAS Visual Analytics and Visual Statistics are used in assignments.

### ERP 5410: Use of Business Intelligence

**Prerequisites:** (IST 3423 or equivalent) and (ERP 2110 or preceded or accompanied by ERP 5110)

This course introduces data-oriented techniques for business intelligence. Topics include Business Intelligence architecture, Business Analytics, and Enterprise Reporting. SAP Business Information Warehouse, BusinessObjects, or similar tools will be used to access and present data, generate reports, and perform analysis.

### ERP 5510: ERP System Administration

**Prerequisites:** ERP 5110

System administration and performance monitoring practices for an Enterprise Resource Planning (ERP) system will be studied. Students will install an instance of an ERP system and establish user management attributes and system security.

### ERP 6120: Enterprise Resource Planning (ERP) Systems Configuration and Integration

**Prerequisite:** ERP 5110

Implementation and design practices for business processes in Enterprise Resource Planning (ERP) systems. The course will examine and apply techniques used in SAP ERP and S/4 HANA system for system configuration and integration, with a focus on Financial Accounting, logistics, Controlling, and production.

### ERP 6220: Data Modeling & Visualization Prototyping for Enterprise Decision Dashboards

**Prerequisite:** ERP 5110 and one of ERP 5410, ERP 6444 or IS&T 6444

Study how to integrate data modeling and visualization prototyping in design and implementation of enterprise decision dashboards for descriptive, predictive, and prescriptive analytics. Assignments and project implementations use SAP HANA Studio, HANA Cloud Platform (HCP), Web IDE, Design Studio, IBM Watson, and SAS Visual Analytics. Semester project prepared.

### ERP 6444: Essentials of Data Warehouses

**Prerequisite:** IST 3423 or Comp Sci 304 or equivalent relational database experience

This course presents the topic of data warehouses and the value to the organization. It takes the student from the database platform to structuring a data warehouse environment. Focus is placed on simplicity and addressing the user community needs.

### ERP 6610: Advanced Customer Relationship Management

**Prerequisite:** ERP 2110 or preceded or accompanied by ERP 5110

Identification (targeting), acquisition, retention, and development (expansion) of (profitable) customers. Effective and efficient management of customers, using IT. SAP CRM and SAS Enterprise Miner used. Research paper and presentation required.

## ERP Courses, Computer & Software Skills, Curriculum Mapping

ERP & Non-ERP Courses	Course	Course Title	Course Supplement Software/SAP Modules Mappings	Course Schedule			Course Focus		Joint Industry Certificate		Undergraduate Students Curriculum Options			Graduate Certificate (4 courses)			
				Spring	Summer	Fall	End User Application	Developer	SAP Certificate Courses (3 courses)	SAS Analytics Certificate (4 courses)		ERP Emphasis, IST & Business Major Electives (3 courses, BIT students)	ERP Minor (5 courses)	Digital Supply Chain Minor (5 courses)	ERP	Business Intelligence	Digital Supply Chain
										Undergraduate	Graduate						
ERP Courses	ERP 2110	Intro to ERP	SAP ECC: FI, MM, SD, PP, CO, HR/HCM	X		X	X		X			major core*	R				
	ERP 4110	ERP Systems in Health Care Industry	MediTech, OpenVista, etc.		X		X					E	E		E		
	ERP 4220	Introduction to Enterprise Decision Dashboard Prototyping	SAP S/4 HANA, SAP HANA Studio, HANA Cloud Platform (HCP), SAP Web IDE, Fiori, Predictive Analytics/Lumira, SAP Design Studio, SAS Visual Analytics & Statistics, IBM Watson Analytics			X		X		R		E	E				
	ERP/IST 4444	Introduction to Data Warehouse	SAP BW/BI: Data Warehouse constructions, ETL, Analytics, Reports, BEx Queries, SAP HANA Studio	X				X	X			E	E				
	ERP 4610	Customer Relationship Management	SAP CRM: Marketing/Campaign Mgt., Lead & Opportunity Mgt., Service & Interaction Center, CRM Analytics, CRM Reporting; SAS Enterprise Miner			X	X		X	E		E	E	R2(note 2)			
	ERP 5110	ERP Design & Implementation	SAP ECC: FI, MM, SD, PP, CO, HR/HCM	X		X	X		X			E	R	R	R	E	E
	ERP 5130	ERP in Small- and Medium Enterprise	Microsoft Dynamics, Power BI, CRM		X			X				E	E		E		
	ERP 5210	Dashboards, Scorecards, and Data Visualization	SAP ECC: FI, CO; SAP Design Studio, SAP BW: BEx Query Reporting, Tableau; SAP Predictive Analytics/Lumira; IBM Watson Analytics Platform	X				X	X			E	E		E	E	
	ERP 5240	Enterprise Application Development and Security	SAP Design Studio, HANA Cloud Platform, and SAP UI5	X					X			E	E		E		
	ERP 5310	Supply Chain Management Systems	SAP ECC & S/4 HANA: PP, MM, SD; SAP SCM; SAS Visual Analytics & Visual Statistics			X	X	X	X	E	E	E	E	R	E		R
	ERP 5410	Use of Business Intelligence	SAP BW/BI: Data Warehouse, BEx queries, InfoCube; SAP HANA: BusinessObjects Predictive Analytics/Lumira & R, Web Intelligence, Business Explorer			X	X		X			E	E	E	E	R	E
	ERP 5510	ERP System Administration	SAP BASIS, Solution Manager		X				X	X		E	E		E		
	ERP 6120	ERP Configuration	SAP ECC & S/4 HANA Configuration: FI, MM, SD, PP, CO	X					X	X					R		E
	ERP 6220	Data Modeling & Visualization Prototyping for Enterprise Decision Dashboards	SAP HANA Studio (data modeling, provisioning, ETL), Fiori, Predictive Analytics/Lumira, HANA Cloud Platform (HCP), SAP Designer Studio, SAS Visual Analytics & Visual Statistics, IBM Watson Analytics, SAP Web IDE, SAP S/4 HANA			X		X			E				E	E	
	ERP/IST 6444	Data Warehouse	SAP BW/BI: Data Warehouse constructions, ETL, Analytics, Reports, BEx Queries, SAP HANA Studio	X					X	X					E	R	
ERP 6610	Advanced Customer Relationship Management in ERP Environment	SAP CRM: Marketing/Campaign Mgt., Lead & Opportunity Mgt., Service & Interaction Center, CRM Analytics, CRM Reporting; SAS Enterprise Miner			X	X		X		E				E	E	E	
Business & IST Courses	IST 1750	Introduction to MIS	SAP ECC Overview	X		X	X										
	IST 6443	Information Retrieval & Analysis	SAS Enterprise Miner, SAS Text Miner, SAP Predictive Analytics (Social Network Analysis)			X	X				RL (Note 4)				E		
	IST 6445	Database Marketing	SAS Base, SAS Enterprise Miner	X			X				RL (Note 4)				E		
	BUS 1210	Financial Accounting	SAP FI	X		X	X						R1 (note 1)				
	BUS 3360	Business Operations				X	X							R1 (note 1)			
ME & Emgt Courses	BUS 6425	Supply Chain and Project Mgt.		X			X										RG1 (note 3)
	Emgt 2211	Engineering Accounting and Finance		X		X							R1 (note 1)				
	ME 3653	Manufacturing		X		X								R1 (note 1)			
	Emgt 3310	Operations and Production Mgt.		X		X								R1 (note 1)			
	Emgt 5614	Supply Chain Management												R1 (note 1)			RG1 (note 3)
	ME 5708	Rapid Product Design and Optimization				X								E			RG1 (note 3)
	Emgt 5615	Production Planning And Scheduling		X													RG1 (note 3)
	ME 5656	Design for Manufacture		X										E			E
	ME 5757	Integrated Product and Process Design		X										E			E
ME 5760	Probabilistic Engineering Design		X										R2(note 2)			E	
ME 5763	Principles and Practice of Computer Aided Design				X								E			E	
Statistics Courses	STAT 5260	Statistical Data Analysis using SAS	SAS Base		X						E	E					
	STAT 5346	Regression Analysis	SAS Base	X							E	E					
	STAT 5353	Statistical Data Analysis	SAS Base			X					E	E					

R: Required Certificate/Emphasis/Minor Courses

E: Elective Courses (ERP Emphasis: any three ERP courses; ERP Minor has three required courses and two elective courses; Digital Supply Chain Minor: has 3 required courses and 2 elective courses)

ERP or BI Graduate Certificate has two required courses and two elective courses; Digital Supply Chain has three required courses and one elective)

Note 1: Choose ONE course from this group

Note 2: Choose ONE course from this group

Note 3: Choose ONE course from this group

Note 4: Choose AT LEAST ONE from this group